Kansas Agricultural Experiment Station Research Reports

Volume 0
Issue 10 *Swine Day (1968-2014)*

Article 231

1981

Effect of space allowance with and without antibiotic on performance of weaned pigs

Robert H. Hines

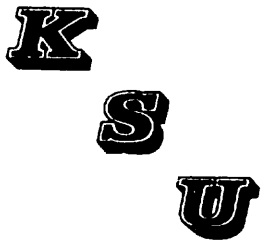
Effect of space allowance with and without antibiotic on performance of weaned pigs

Abstract

Two feeding trials were conducted to evaluate 1.5, 2.5, and 3.5 sq. ft. of space allowance for the four week old weaned pig. In addition, performance of pigs fed an antibiotic (ASP 250) versus no antibiotic at each space allowance was evaluated. The pigs fed an antibiotic gained significantly faster than pigs receiving no antibiotic; however, most of the improvements were observed the first three weeks of the five week trial. Maximum growth was observed at 2.5 sq. ft. and 3.5 sq. ft. of space allowance. Pigs given 1.5 sq. ft. gained slightly slower throughout the trial. This study suggests that 2.5 sq. ft. of space (totally slatted floor) is adequate for the 4-week-old pig and thereafter until weighing approximately 45 lbs.; Swine Day, Manhattan, KS, November 12, 1981

Keywords

Swine day, 1981; Kansas Agricultural Experiment Station contribution; no. 82-128-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 406; Swine; Antibiotics; Performance; Weaning



Effect Of Space Allowance With and Without Antibiotic on Performance of Weaned Pigs

R.H. Hines

Summary

Two feeding trials were conducted to evaluate 1.5, 2.5, and 3.5 sq. ft. of space allowance for the four week old weaned pig. In addition, performance of pigs fed an antibiotic (ASP 250) versus no antibiotic at each space allowance was evaluated. The pigs fed an antibiotic gained significantly faster than pigs receiving no antibiotic; however, most of the improvements were observed the first three weeks of the five week trial. Maximum growth was observed at 2.5 sq. ft. and 3.5 sq. ft. of space allowance. Pigs given 1.5 sq. ft. gained slightly slower throughout the trial. This study suggests that 2.5 sq. ft. of space (totally slatted floor) is adequate for the 4-week-old pig and thereafter until weighing approximately 45 lbs.

Introduction

With producers trending toward younger weaning ages, the management of the weaned pig has become a major problem. Intensifying hog programs has led to an interest in determining the minimal space required for housing a 4-week-old pig for the next 5 weeks and in determining the value of an antibiotic in the post-weaned pig's diet to help the pig through that stress period.

Procedure

A 2x3 factorial experiment was used to evaluate space allowances of 1.5, 2.5, and 3.5 sq. ft. per pig. In addition, pigs were fed a diet with antibiotic (ASP-250) or without antibiotic. Two-hundred forty pigs were used in two trials, two replicates per trial per treatment. Ten pigs were housed in each pen, with pen size adjusted to reach desired space allowance. Each pen was a totally slatted pen (plastic slats) with a 5-hole feeder and a nipple waterer. Pigs were weighed weekly to determine the effect of space on growth as the pigs became larger. The basal diet was a corn-soybean meal, fortified diet that had a calculated analysis of 17.70% crude protein, .88% lysine, .84% calcium, and .71% phosphorus. In both trials, the pigs average initial weight was approximately 15 lbs. The average final weight was 45 lbs. The experiment lasted 5 weeks.

Results and Discussion

Table 25 presents the results of Trial I. The first three weeks of the trial, the feeding of antibiotic improved pig performance at each space allowance, as compared with feeding no antibiotic. During the last two weeks of the trial, the results were mixed in that some of the pigs receiving no antibiotic gained faster. Overall, pigs performed equally the first four weeks, however, starting week five the pigs having only 1.5 sq. ft. of space appeared to be very crowded, which caused some lack of uniformity developing.

Table 25. Weaned Pig Performance (Trial I)

Space:	1.5 sq. ft.		2.5 sq. ft.		3.5 sq. ft.	
Antibiotic:	0	+	0	+	0	+
Avg. da. gain, lbs.						
Week 1	.49	.61	.60	.64	.64	.68
Week 2	.64	.76	.77	.74	.62	.84
Week 3	.80	.84	.93	1.00	.83	.92
Week 4	.96	.91	.92	.90	.90	1.04
Week 5	.84	.93	.94	.93	.80	1.20
Overall						
ADG, week 1-5	.74	.81	.84	.84	.76	.94
F/G, week 1-5	2.14	2.08	2.14	2.00	2.14	1.97

20 pigs per treatment; avg. initial wt. ≃ 16 lbs., final weight ≃ 45 lbs.

Table 26 presents the results of Trial II, indicating pigs performed similar to those in Trail I. The effect of feeding antibiotic was apparent the first 3 weeks of the trial; thereafter, performance was mixed. Pigs given 1.5 sq. ft. of space appeared to have a slightly reduced rate of gain the fourth and fifth weeks of the trial, suggesting that 1.5 sq. ft. was not adequate.

Table 26. Weaned Pig Performance (Trial II)

Space.	1.5 sq. ft.		2.5 sq. ft.		3.5 sq. ft.	
Antibiotic:	0	+	0	+	0	+
Avg. da. gain, lbs.						
Week 1	.40	.43	.42	.49	.38	.48
Week 2	.50	.74	.58	.68	.70	.76
Week 3	.92	1.02	.90	1.04	.97	1.12
Week 4	.90	.98	1.07	1.09	1.22	1.04
Week 5	1.10	.97	1.04	1.35	1.07	1.31
Overall						
ADG, week 1-5	.76	.83	.80	.94	.87	.94
F/G, week 1-5	1.93	1.96	1.95	1.80	1.95	1.90

20 pigs per treatment; avg. initial wt. ≃ 15 lbs., final weight ≃ 45 lbs.

In Table 27, the effect of 1.5, 2.5, and 3.5 sq. ft. of space on pig performance is summarized. A significant reduction in daily gain was observed for the pigs allowed 1.5 sq. ft. as opposed to those allowed 2.5 or 3.5 sq. ft. Feed required per pound of gain was not significantly affected by space allowance.

Table 27. Effect of Space Allowance on Performance

Space:	1.5 sq. ft.	2.5 sq. ft.	3.5 sq. ft.
No. pigs	80	80	80
Avg da. gain, lbs.			
Week 1	.48	.54	.54
Week 2	.66	.69	.73
Week 3	.90	.97	.96
Week 4	.94	1.00	1.10
Week 5	.96	1.06	1.04
Overall			
ADG, week 1-5	.78	.86	.88
F/G, week 1-5	2.03	1.97	1.99

Table 28 presents the effect of feeding antibiotics to the 4-week-old weaned pig during post-weaning feeding. Adding antibiotics to the starter diet significantly improved the average daily gain the entire feeding period. It should be noted that most of the difference observed occurred the first three weeks of the trial. Feeding antibiotic improved feed efficiency 5%.

Table 28. Performance of Weaned Pigs W/Wo Antibiotic

	0 Antibiotic	+ Antibiotic
No. pigs:	120	120
Avg. da. gain, lbs.		
Week 1	.48	.48
Week 2	.64	.75
Week 3	.89	.99
Week 4	1.03	.99
Week 5	.96	1.11
Overall		
ADG, week 1-5, lbs.	.80	.88
F/G, week 1-5	2.04	1.95